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THE VALUE OF THE PHYSICAL vs. THE HUMAN ELEMENT IN SECONDARY SCHOOL GEOGRAPHY [1]

By FRANK CARNEY
Denison University, Granville, Ohio

ALL are agreed that the purpose of our public school system is to prepare our youth for life, not for college. If our secondary schools prepare well for life, they should, at the same time, fit one for studying in college. If the colleges think otherwise, they should readjust their entrance requirements. The fact that less than ten per cent.[2] of the pupils in our secondary schools graduate, argues against a college-outlined high school course, unless it can be shown that such a course is for the best interests of the more than ninety per cent. who do not enter college. There are very few teachers today who defend the older type of Physical Geography textbooks. Most of us welcome the newer types, because we have nothing better; at the same time, we feel that even these do not place sufficient emphasis on the human element in geography.

I think we are all agreed on another proposition, namely: that sudents acquire mental training particularly from studies that interest them. When topics interest us, the mind acts with little or no forcing.

The customary treatment of the physical in geography usually plunges the student at once far beyond his conception depth; the floundering immediately becomes distasteful. A study of land forms, as treated in practically all our text books, is a topic to the point. When, however, this phase of Physiography is made secondary to the organic side, in which man is foremost, the question of interest will take care of itself.

Our text books in geography contain too little of the organic. No one questions that these books give the students a degree of training, but it is an open question whether more training cannot be had in the same time from such a presentation of the subject as fits better into

1. Read at the Tenth Meeting of the Central Association of Science and Mathematics Teachers, Cleveland, Ohio, Nov. 26, 1910.
2. James F. Chamberlain, *School Science and Mathematics*, Vol IX (1910), p. 833.

the after life of the students. Only an inconsiderable number of our students will ever make use of the logically developed treatment of earth processes that are basal to relief features. By putting the emphasis on the relief as it is, and the influence that this relief is constantly exercising on organic activities, we give the student a point of view for which he will feel grateful in after life.

WHERE WE MAY GIVE GREATER EMPHASIS TO THE HUMAN ELEMENT.

I would make the following suggestions on the relation of the physical and the human in our secondary school geography course. Basal to these suggestions is the idea that the teaching of the physical is essential, wherever a better understanding of responses may thereby be gained. Since a city of medium size presents neither the extreme of greatly cenralized population nor of sparse rural conditions, I have made such a city the locus of these suggestions.

The location of cities.—Population centers are usually responses to the immediate relief features, combined sometimes with secondary influences connected with more distant areas. Therefore such a study of the topography as emphasizes the location of transportation routes is necessary. The junction of valleys often marks the convergence of trade routes; and at the point of union, we have conditions for the further growth of a town already in existence. A narrow plain, backed by an escarpment and fronted by a body of water, is very apt to carry lines of transportation. The strategic points on this plain, especially where rivers form harbors, are naturally suited to the development of a city. Passes and through valleys between drainage systems generally carry lines of traffic. The portages of the pioneer days became modern railway towns. The competitive growth of ocean harbors is decided by their location in reference to the easiest routes penetrating the interior areas of production and consumption.

Physical examination of soils.—Such a study of soils as will lead to a better understanding of the food-producing capacity of the region is a legitimate introduction of the physical into our geographical course. The opportunities for this study are always offered near active cities. The competition in meeting the food-demand of the city seldom fails to elicit intensive agriculture on the nearby farm lands. The variety of the farming is controlled largely by the nature of the soils. While in a secondary course of geography, we need not go into a thorough study of soils, certainly not to the extent of chemical analysis, at the same time, the student may be led to note the obvious physical distinctions. Lessons of this kind, as a phase of field work, will make a more successful appeal to the student than will a mere textbook study of the processes of weathering or of other isolated in-

organic processes with which the student has no immediate contact. Furthermore, I believe that using every reasonable opportunity in all lines of science to cultivate an intelligent sympathy with agricultural conditions is time well spent. If, during the past decades, such opportunities in our various courses of study had been improved, doubtless we would not have the present heavy swing of the educational pendulum towards agricultural education. This very important line of training has been neglected. We have awakened to the fact, and an effort is being made to repair the negligence. Rural, as well as urban pupils, so far as my experience goes, always take interest in this line of study.

Intra-city passenger traffic.—We may also study with profit the physical conditions in the immediate municipal environment, that influence intra-city passenger communication. In centers of condensed population, this is an important topic. Its general interest warrants, perhaps, a more detailed study than would be legitimate in any chapter of a textbook. Elevated roads, belt lines and subways are man's responses to the geology of the population center. In rapidly growing cities, man's compliance with the demands for speedy transportation is generally far behind the need. Geography lessons, field, loboratory and classroom, in this connection, may introduce much detail about bed-rock geology, as well as relief features, without any risk of dulling the student's interest. Connected with this same study is the question of suburban expansion of our cities. Sometimes we find that natural conditions practically control city expansion; at other times, man is free to carry the municipal limits uniformly outward. In either case, local relief features mean more to the student, when studied for their possibilities of city expansion.

Local mineral products.—The students in each city or locality should be made familiar with the local raw mineral products. To study shale as a type of rock, making it an occasion for discussing methods of sedimentation, etc., is "dry as dust" business with most secondary school students. But when we see the shale rise into lofty buildings, housing industry and education, hospitals and factories, it has a different significance. Building stones, geologically interpreted, and then left, do not add much to the youth's education, but the characteristics of building stones, physical and otherwise, as observed in structures, bring out relationships that are important. Gravel, sand, and quarry rubbish, have an educational value when made into the cement of arches spanning rivers, or of walls in great buildings. Iron ore, as a rock, has only a textbook importance, but when, under man's hand, it becomes steel, giving civilization a new complexion, it has more than scientific interest. The field of economic geology, chemistry

and metallurgy may be safely touched in teaching your immediate region. It is the human interest that should decide what we teach.

More distant economic products.—If your city, besides using the raw material of its own immediate environment, draws on distant areas for natural products, you should add these to your list of topics to be thoroughly studied. Cotton does not grow in the British Isles, but every student of Manchester should have a vivid picture of cotton farming in our Southern States. The silk worm does not thrive in New Jersey, but in the public schools of Paterson, the source of the raw material, there so extensively used, should be thoroughly studied. Iron ore is not mined in the vicinity of Cleveland, but the schools of this city doubtless spend profitable time in studying the Superior region, with which so much industry of the city is associated.

Secondary industries.—In all centers of population where local, as well as imported, raw materials are manufactured, we find many secondary industries growing out of the initial ventures. These secondary plants reflect a natural condition, and often show, better than do the primary plants, man's skill in responding to his physical environment. The secondary industries of this city, in all probability, represent a much greater capital investment than do those that depend directly upon local raw products. The history of the secondary plants in any particular city, covering two decades, gives us an instructive lesson in man's properly judging the trade possibilities. The slow battle of some plants to succeed, the speed failure of others, frequently emphasize natural trade laws that men had ignored. These human relations, often brought to our attention by business disasters, the alert teacher in any city will discover and attempt to trace to their physical basis. Having discovered wherein the inorganic plays its part, we should emphasize that much of the physical in our teaching.

Transportation barriers.—In still another connection, the association of the physical and man's responses is the proper mode of attack in teaching the physical. In the early days, pianos were manufactured only on the Atlantic seaboard. As population moved westward, and wealth accumulated, there was a trans-Appalachian demand for these instruments. For a long time, a large item in the cost to the western consumer was freight. At length, local energy decided to manufacture pianos in competition with the eastern plants; these home plants were inspired by local demands for the finished product, and as an offset to the reputation of the instruments made by the old houses, they could undersell them at least to the extent of the cost of transportation. The shipment of a piano, or any other goods, from Philadelphia to Columbus, Ohio, directs attention to the

Appalachian barrier as a factor in figuring costs. In numerous other cities on this side of the Appalachians, where plants were established to meet local demands for manufactured goods, we find illustrations of the same basal principle. The Appalachians, taught as mountains, mean little more than the Himalayas or any other mountains. When we consider the Appalachians in their human relations, they become mountains in reality.

Shipping routes for the output of factories.—From still a different viewpoint, we should teach the physical. I refer here to the localizing of industrial plants purely because of shipping facilities for the finished product. Often it is a far more important matter to the prospective manufacturer to determine the region that will use his output than to concern himself first with the sources of his raw material; he can assemble raw material at his own leisure, but in filling orders for his goods, quick delivery is a big item in competition. A study of shipping facilities shows how transportation lines are influenced by physiographic conditions. If relief features cause trunk railways to converge towards a small area or within a narrow belt, time is likely to change a hamlet into a city.

The Allegheny plateau is briefly discussed in all our texts of physical geography. I do not recall a single one, however, that gives a very thorough consideration to the many types of human responses that we find the entire length of this plateau; prominent among these responses are the examples of new vigor given towns by transportation routes making them good distribution points for manufacturers; these centers of population had made their early growth by serving the lesser geographic provinces tributary to them, but their later prosperity depends upon activities that have arisen since railways came their way.

Government topographic maps.—Within the last year, some teachers have seriously arraigned the use of topographic maps. This criticism has received attention from men whose training and teaching experience make them very competent to speak. I believe thoroughly in topographic maps, and have never yet met a class to whom the maps proved puzzles. The maps should be used especially for the very localities which the student can visit; and we have no better way of getting a correct view of distant localities. Listless laboratory periods on these maps should be expected when they are made the means of studying relief features merely as physiography. When students have been led to inspect a topographic sheet for its human relations, there is less danger of time being wasted or of a dearth of interest. A very important use of these maps is the possibilities they

afford for interpreting the organic geography of regions that cannot be visited by our classes.

Comparative study of cities.—These phases of the physical and human elements, following their consideration in the home region, will have increased meaning, if different cities are contrasted so as to bring out their relative advantages. In Ohio, for example, a study of the history and rate of development, as population centers, of Cincinnati and Cleveland, affords a splendid opportunity to this end. The former city for many decades was a very important center, while the other was still relatively insignificant. During these decades the river passing Cincinnati and the territory thus easily brought within the range of its buying and selling caused a rapid growth. Meanwhile Cleveland had to depend on a very limited industrial area. When, in later decades, Cleveland's larger geographic province was crossed by modern lines of transportation it commenced to gain, and surpassed Cincinnati.

San Francisco and Seattle, Denver and Omaha, Buffalo and Detroit, Baltimore and Boston, New York and Chicago, are other pairs that show a variety of geographic invitation and interesting human responses.

The atmosphere and climate.—A general study of the atmosphere forms a part of all our geography texts. Outlined laboratory exercises also emphasize man's effort at analyzing the important variable factors in climate, but neither the texts nor laboratory work so correlate climate and organic responses that the student is permanently impressed with the relation. The distribution and luxuriance of plant growth, the varying density of population, the highly specialized functions of particular organic structures, as influenced by climate, should have more attention in teaching the atmosphere. The effect of mountains as climatic barriers is probably quite as important as the fact that minerals are frequently associated with them. The study of the oscillation of the calm, and adjacent trade wind, belts is an instructive phase of geography; but the human side in the areas of the earth hereby affected is far more interesting.

General principles.—The most effective study of either the physical or the human elements in geography must concern the home region. A comprehensive study of the relations between the organic and the inorganic for the whole earth is out of the question; nevertheless, many of the principles found in such a universal study are active in particular localties. One such principle thoroughly mastered in the home field will become a permanent asset in the educational stock that the student takes into life. However, there are a few general principles or relationships between the organic and inor-

ganic which are so obvious that we can safely present them, though the home region offers nothing identical.

A study of the gross relief of the different continents is an inefficient memory exercise unless made secondary to a study of the distribution of organisms. We now have in our schools so ample an outfit of colored relief maps that this phase of geography may be more profitably taught. The concentration of human population within a short vertical distance of sea level is fairly well understood as a fact; we comprehend less thoroughly, however, the several reasons back of this distribution. The richer soil in the alluvial lowlands, the convenience to the food supply of rivers and oceans, and the increased ease of protection from man's enemies, himself included, are the original and more obvious reasons; but the secondary factors that have come into play as man has made progress in industry are far more important. Were it not for the secondary factors, the lowlands of China and Europe would have been seriously overpopulated long ago; these factors, when listed fall more generally under the human element in geography.

Conclusion.—The central theme of civilization is making the inorganic negotiable. Civilization may be measured by the degree to which this has been attained; its stage among different peoples is marked by their industrial progress, which is only another name for this central theme. While man is influenced much by his inorganic environment, at the same time, his advance is often gauged by his mastery of, or by his skillful reaction to, that environment. Bartering, buying and selling, manufacturing, consuming, building, designing, investments, exploiting resources, mastering disease, making two blades grow where only one now grows, shortening transportation routes, cutting down time on passenger service, or anywise extending the realm of industrial achievement, are items in the up-keep of civilization. When we, as teachers of geography, fully appreciate this fact, giving the chief place to human relations, we are most useful; when we keep our faces turned to the past, and emphasize the memorizing of facts because they are completed accomplishments, we are of far less value to our profession.

Rand McNally & Co. (Chicago) have recently brought out a new catalogue of their maps, globes and atlases. It contains some two hundred and fifty pages, is beautifully illustrated and completely indexed.

A. J. Nystrom & Co. (Chicago) are also distributing a well indexed and well illustrated catalogue of the Johnston maps and globes.

FIELD WORK IN PHYSICAL GEOGRAPHY*

By CHARLES R. DRYER.
Normal School Terre Haute, Ind.

AT the third meeting of the State Science Teachers Association held twelve years ago, I read a paper on Scientific Geography in the High School, in which I took "the part of an advocate, before a highly competent, but not unbiased court, for the right of geography to an equal place with any other subject in the high school curriculum." I made my plea on three counts: first, the value of the subject matter as information; second, the value of the training it may furnish; and third, its availability. The twelve years that have passed since that day have witnessed a notable expansion of the teaching of physical geography, and a parallel improvement in textbooks, methods and teachers. The reports of the U. S. Commissioner of Education show that in number of pupils studying the subject it still holds the first rank among the sciences taught in public high schools.

Scientific training can be obtained from any subject only in proportion as the student can be brought face to face with the phenomena. As Dr. Gordon puts it, "he must come up against it." In this respect geography labors under some disadvantage in comparison with other sciences. In chemistry and physics any amount of material can be brought into the laboratory and placed in the students' hands. Biology in the high school is actually suffering, so some of its friends say, from too much dissection and microscopic study of dead organisms in the laboratory, so that what ought to be biology has become only necrology. It is possible for geography to suffer from the same kind of dry rot. Where geographical laboratories have been liberally equipped, too much of the work may be concerned, not with actual forms and processes, but with artificial representations of them—maps, models and pictures. The only essential defect of geography as a scientific discipline is that so large a part of its phenomena cannot be presented immediately to the senses, and it is our business as teachers to minimize this defect. Those phases of physical geography, in which laboratory work can be made scientific in the strictest sense, are astronomical and atmospheric, because the phenomena present themselves for direct observation in or from the laboratory. The student can hardly escape "coming up against" day and night, the seasons and the weather.

The study of land forms, to which our textbooks give so large a part of their space, cannot, in my opinion, claim any considerable

*Read at the meeting of the Indiana Association of Science and Mathematics Teachers, Mar. 5, 1910.

value as a scientific discipline without extended field work. It is only by virtue of field work unconsciously, or at least unsystematically, done that any progress at all can be made in this subject. Every student must be assumed to have seen something of the face of the earth, to have travelled over some scores or hundreds of square miles of country, to know from actual observation a hill, a valley, a plain, a stream of running water and a pond of still water. These form the irreducible minimum upon which to build anything more than a verbal knowledge of land forms. In this respect the country boy is relatively rich and the city girl poor. Every teacher can testify how near to pauperism the latter can come.

A large number of elements enter into the composition of any landscape, and geography has something to say about all of them. The form of the ground is fundamental. It may be clearly an expression of structure, and if so, that relation should be studied. It necessarily represents some stage in a general physiographic process, and this aspect is generally susceptible of demonstration. The relief model, or peculiar physiognomy, may be diastrophic, volcanic, glacial, fluvial, littoral or eolian, or a combination of two or more of these, and the student can be taught to recognize and distinguish them. The model has not always been just as it is now and will not be the same in the future. The land surface is alive in the sense that it is undergoing constant change in accordance with definite and discoverable laws of development. That plain has not always been a plain; it has been made in the long lapse of ages by some agent of degradation or deposit. It is even now growing wider and flatter or is being dissected and carried away. That hill is growing steeper or more gentle in slope. It is being reduced in absolute height above the sea, while perhaps, from year to year, it is rising higher above the valley at its foot. That valley is growing deeper or more canyon-like or its floor is being built up by annual deposits of alluvium. That lake is being filled by wash from the hills and the growth of vegetation and in a few years will become a marsh or a meadow, as its neighbor has already done. There is no feature in the landscape about which these and many other problems may not be demonstrated before the student's eyes. There is no field which presents better opportunities for the collection of scientific evidence, the observation of natural processes, and the exercise of scientific inference.

The landscape is not made up entirely of earth and rock. It is clothed with vegetation, natural and more or less modified by human action, and this living garment of the land is passing through a series of changes parallel with the changes of land material and form.

The soil forms the connecting link between the earth crust and its clothing and determines very strictly warp, woof and texture.

Beginning with Humboldt in 1805, botanists have elaborated the science of ecology, defined by Haeckel in 1885 as "the science treating of the reciprocal relations of organisms and the external world," and ecology is only another name for organic geography. It has become a science only within the last twenty years because up to the beginning of that period, physical geographers had not laid a sufficient foundation for it. By the harmonious cooperation of geographers and botanists a new science has been added to the conquest of the world. It seems to me that, so far, geographers have been slow to avail themselves of this field to the extent which its interest and importance warrant. The natural vegetation of a region is the fullest and most suggestive expression, on the one hand, of the physical conditions of structure, relief and climate which prevail there, and on the other hand, of the natural controls exerted upon human activities. Vegetation is the key which unlocks the chain of geographic causes and consequences. To use it, no great knowledge of technical botany—the botany of the microscope and reagent—is necessary. The thorough field geographer cannot get along without the botanist and the field botanist must appeal to the physical geographer. The two together can carry on a kind of natural study which is worthy of the name. It is no more difficult to correlate an oak forest with a gravel ridge; elms, soft maples, black ash or tamarack with wet ground; sycamores and willows with a stream bank; cattails with shallow water, and pond lilies with a pond, than to correlate stream erosion with the buoyancy and flow of liquids, glacial action with the properties of ice, or winds, evaporation, and precipitation with the varying temperature of gases. With all these things human affairs are tangled up—I had almost said inextricably, but will substitute incredibly. To disentangle these uncounted threads of relationship is the crowning and alluring task of the geographer in the field.

All the varied forms and features which enter into the composition of a landscape have mutual relations with one another which are causal, and by virtue of which they possess a scientific unity. They also stand in artistic relations, by virtue of which they possess an esthetic unity and constitute a type of scenery. Geography has something to say about this also. Only a geographer can deal with what Humboldt called the "aspects of Nature", and can undertake a scientific study of scenery. Here he can join hands with the artist in analysis and synthesis of the elements which make a landscape and determine the dominant emotion of joy, gloom, grandeur, or

awe which impresses the human mind. The best depiction of the Colorado desert has been written by a professor of art, John C. Van Dyke. Of course this phase of geography must be acquired in the field. No study of pictures can educate to an esthetic appreciation of landscape a person who cannot see a picture in every actual landscape.

To come down to business: I am trying to make a plea for field work, as the heart and core of geographical teaching and study. Without it physical geography is bound to be dull and lifeless, resulting in vague ideas and verbal memories. A large part of geography is not a laboratory subject unless the laboratory is out of doors. In any school physical geography ought to compel field work which will drag the teacher and student away from the molding trough and contour map. If a cast iron program prevents students going out on school days, take them on Saturdays or Sundays. If some of the class can not go out either day, take out those who can. If out of a class of thirty only five or three can be mustered, go with five or three or one. If worse comes to worst, go out alone. You can not help getting an experience which will inspire your teaching and will be felt by your dullest student. Go anywhere and anyway you can. You can not miss it in any spot where God's country has not been obliterated by man's town. Be as judicious and systematic as you can, but do not wait to be either.

There is one plan which I have found so fruitful that I have come to regard it as in some sense ideal. I chose an area five or six miles square of unusually varied topography and accessible by trolley cars. The class was divided into sections and a definite portion was assigned to each for study. I took care that each section should contain at least one student with some capacity for leadership. Each student made a copy of the county map of the region on a large scale which he took along with him to the field. From railroad profiles the elevation of numerous points was obtained and each party was furnished with a hand level and staff. After sufficient class and individual instruction had been given in the simple process of leveling, each party was sent out to complete the map. The instructions were to run lines of levels along roads, and across lots whenever necessary; to record in a note book and on the pocket map the elevation of a sufficient number of points; to leave bench marks on fences, stones, bridges and mail boxes; to sketch on the pocket map the course of all streams and tributaries; to mark on the map the position of crests, summits, bluff bases and abrupt changes of slope; to measure distances by pacing whenever desirable; to mark as far as possible the distribution of soils and the location of exposures of clay, sand,

gravel and bed rock of any kind; to map the areas in forest, those covered with any other natural or spontaneous vegetation, and those devoted to the leading crops; to locate coal mines, clay and shale pits, brick and tile factories and other industrial plants; in short to bring in the data necessary to make as complete a map as possible of the topographic, hydrographic, geologic and economic features of the region.

The students did the work whenever they could, singly, or in groups of varying number, each being made responsible for some definite part of the work. The advice and guidance of the instructor was in demand and given at every stage. A sufficient number of excursions was made with the whole class to give all a general knowledge of the whole field, while each individual got an intimate personal experience of some part of it. The data were collected upon a large map in the laboratory, and the final visible result was a contoured map of the area of which there was no reason to be ashamed. But the leveling, surveying and mapping were only means to an end, which was the development in every student of a topographic and geographic sense, in the broadest and deepest meaning of the term. They walked and worked and thought. Physical, intellectual and emotional activity stimulated one another. Interest, pleasure and profit were raised to a high power. City girls went out on Saturday morning to spend three or four hours and forgot to return until late in the afternoon. All were filled with zeal by doing something that had never been done before, something like what the real surveyors, topographers, geographers, map-makers and scientific authorities do. They experienced something of the joy of nature study as defined by Prof. Geddes, "the habit of observing and thinking for oneself and at one's best, without books or helps, in presence of facts, and in the open air". They knew hills and valleys and streams, woods, meadows and corn fields, farms, factories and mines, and made the acquaintance of a variety of interesting people. Perhaps as never before they "came up against" a number of things.

I am aware that few, if any, high school teachers can attempt such work upon so large a scale as I did; but I wish that every one might try this plan as thoroughly as circumstances permit. If 25 or 30 square miles are too much, try it on one square mile. A workable hand level can be made at no expense, and the attempt at contouring in the field will put more meaning into maps than any amount of laboratory work. The mapping of drainage lines alone may prove a revelation, as it did in my case. Probably more physiographic problems will be discovered than can be solved, but to see a problem is almost as good as to solve it. I am sure you will be agreeably surprised, as I was, at every turn. The results will be better than you can anticipate.

VILLAGE-TOWNS AND CITIES OF RUSSIA

By FREDERICK HOMBURG,
Woodward High School, Cincinnati, Ohio

IN England they make fine distinctions between city and town. Large settlements were called cities only if distinguished in some way, as by being the residence place of some dignitary, or by being fortified. The settlers in America forgot these distinctions, for there were no walled towns, and none were marked especially as seats of princes or bishops; hence the notion grew, that there is no difference between city and town except in size and importance. In the United States and in Canada the question is settled by legislative enactment, so that a town with more than a certain fixed number of inhabitants may be rated as a city. In America, then, a city is larger and more cosmopolitan than a town, but there are cities of first class, second class, etc.; while a village is merely a diminutive town. Continental geographers call places cities and towns in a similar way; yet they carefully distinguish them from villages.

In America farmers usually live upon their farms; but in a number of European countries this is not the rule. While there may be here and there a land-owner who lives on his land, sometimes in quite a pretentious establishment with manor-house, servant-dwellings, barns, etc., the peasants usually live in settlements whence they go afield for their day labor, and to which they return to rest for the night. Such a hive of rural population, be it large or small, is a village. From this view-point a settlement is not a town unless it has its own excuse for being, i. e., some special reason for existence besides mere shelter and gregariousness. Thus settlements at the confluence of rivers, or at railroad junctions because of trade opportunities, or at places affording waterpower for industrial purposes would be towns at the very beginning. By way of contrast let us suppose out West a number of ranches converge to nearly a point, and that at this common ground the cowboys settle in rude shacks, go out to the herds each morning and return to rest in the evening; according to the above way of regarding this matter such an aggregation of dwellings would be rated as a village even if it sheltered ten thousand cow punchers. If we regard our small population centers in this way, we find fewer villages but more small towns. The cowboy illustration just given is not far-fetched. Out in the Hungarian plain, particularly about the flood-plain of the Theiss, settlements are made up of collections of dwellings of the most primitive kind. Both wood and stone are wanting in the wide steppe, so the houses are built of a brick made of clay or mud, and covered with roofs of straw. Adja-

cent are the gardens and vineyards; then in a wider circle come the fields of grain, and belond these are the pastures. In the warm season the population lives in the fields, and after harvest returns to the settlement for winter. This semi-nomadic life is a piece of heredity from herdsmen ancestors and is a stepping-stone to fixed abode; but the Magyars have done great work in turning a steppe, fit only for grazing, into cultivated fields, literally making many blades grow in place of few.

What shall we call these great collections of rude hovels with populations amounting in some instances to eighty thousand souls? The German systematizers, recognizing the difficulty of calling these places villages,—their enormous sizes against this,—or cities,—they are simply dwelling-places of a rural population,—have coined a hybrid term "village-towns," a name which fits well and is more definite than our word "country-town."

In the wide plains of Russia, with a population largely agricultural we might expect a similar condition. Most of the Russian towns, especially those in the eastern part, are merely overgrown villages made up of aggregations of rude hovels. The dreary sameness of the streets or rather roads, in wretched condition, intersecting at right angles between these primitive dwellings recalls the village-towns of the Hungarian plains. In strange contrast to these monotonous places, the large Russian cities are of peculiar interest. St. Petersburg was a city from its very incipience. Called into being by the strong will of an enlightened despot, it has splendidly verified the keenness of his prevision in selecting this site. The new capital was to be the connecting link between Russia and western Europe; it not only answered these expectations, but it has become the center of European art and intelligence in czardom, and its most important trade and industrial center. The land routes and the water courses, joined by a fine system of canals, converge toward the Neva, at whose mouth a branch of the Baltic reaches farthest into the land.

This favorable commercial position of St. Petersburg has neutralized its many disadvantages: the peripheral position of the capital city with respect to the realm—it is in the extreme West, less than twenty-five miles from the Finnish border—the damp, unhealthy climate, the long ice blockade, the swampy ground into which piles have to be driven at the cost of many lives, the inundations and the barren surroundings. The deepened Neva forms the port; and canals thread the city after the fashion of Holland where Peter the Great gained his experience as a carpenter. The general impression is that of a modern European city.

For Russian characteristics you must turn to the center of gravity of the interior, to the ancient capital town, the holy city Moscow, sit-

uated at the head of navigation of a branch of the Oka, the great tributary of the Volga. It very nearly holds its own against the modern capital; for it is situated at the junction of many roads, and, by its nearness to large coal measures, it has become the seat of central Russian industry. The old coronation town, with its memories dear to every loyal Russian, with its distance from Western Europe and from the sea, is the center of ultra-Russianism with its slavish devotion to the Czar and the Church. Hence the term Muscovite is not restricted to the inhabitants of the great city, but is extended so as to include all that is strictly Russian. In architecture as in population there is a strange mixture of Russian peculiarities and Western ways, which makes it one of the most interesting of cities.

The confluence of the Oka with the Volga is a point marked out for a great trading station; there is direct water communication with all parts of Russia and with Asia. This is the location of Nijni-Novgorod, one of the most picturesque of Russian towns. The peninsula between the two great rivers, flooded by high water in spring, is the scene of most intense activity in early fall; for then the great Fair, a most important factor in Russian commerce, is held here. At such times the impressions of the life in the streets is overwhelming: this jostling of a temporary population derived from all parts of the East, this rush and bustle of a world mart. One must feel the heart-beat of the Oriental world in the midst of a community where the ear is bewildered by the sound of a hundred tongues, the eye by the features and complexions of many races, and by the colors and designs of all Eastern costumes.

Where the Volga divides into many distributaries and is building a great delta out into the Caspian Sea, on an island in the main channel, lies Asthrachan. What is temporary, but highly accentuated at Nijni-Novgorod during the Fair, is permanent at Asthrachan, i. e., it has a very mixed population. This is to be expected since it is the center of all shipping on the Caspian, its commerce extending to trans-Caspian countries, especially to Persia and India. It is also the center of the extensive fisheries on the lower Volga; the fish of value is the sturgeon, whose smoked meat is a delicacy from whose ova the celebated caviar is prepared, and whose bladder furnishes the best isinglass.

CLIMATE AND COFFEE IN BRAZIL*

By ROBERT DeC. WARD
Harvard University, Cambridge, Mass.

BRAZIL is the colossus among all coffee-producing countries, for she alone sends out annually more than three-quarters of the world's total coffee crop. The heart of the Brazilian coffee district is in the plateau region north and north-west of the city of Sao Paulo, in the State of Sao Paulo (lats. 20°—25° S., longs. 44°—53° W.). In this one area there are reported to be 700,000,000 coffee trees, while the coffee industry as a whole is said to represent an invested capital of $500,000,000. Many factors are concerned in producing the extraordinarily favorable conditions which have made this small part of Brazil the most important coffee country in the world. Among these are soil, altitude, exposure, and the absence of many insect pests and plant diseases. One of the most fundamental controls is the **climate.** Lying near the margin of the southeast trade belt, the Sao Paulo coffee district is not too far from the equator to be reached by the equatorial rains in the summer, and a sufficient rainfall is thus assured for the proper growth of the coffee trees. On the other hand, the prevalence of the Trades during the winter months brings the dry season which is of immense economic importance in the harvesting and drying of the crop. Further, being near the outer limits of the "hot belt" and at an altitude of several hundred feet above sea-level, the heat is not so intense as to necessitate any protection against the sun except in the case of the very young trees. The danger from frost, which is certainly present in winter, has been greatly exaggerated. Frosts do occur, but only at intervals of several years (say six or seven) do they do any damage which is worth much consideration. As regards humidity, the conditions are such that the air is dry enough for outdoor drying in winter, and not so damp as to promote the excessive growth of weeds in summer. Such a combination of climatic conditions is an ideal one. **There are few districts in the world whose economic climatology is more important.** A visit to such a country is of the greatest interest to the climatologist.

The Sao Paulo coffee district comes within Köppen's "subtropical belt of the temperate zone," whose characteristics are that four to eleven months are hot (mean temperature over 68° F.) and one to eight months are "temperate" (50°-68°). The mean annual temperatures average between 65° and 70°. The mean annual ranges are

*Abstract of an article on *The Economic Climatology of the Coffee District of São Paulo, Brazil,* in *Bulletin American Geographical Society,* June, 1911, pp. 428-445.

from 12° to 15°. In summer, the thermometer may rise to nearly, or even above 100°. The rainfall is between 45 and 60 inches annually. The district is, therefore, plentifully watered, a fact which not only greatly facilitates the harvesting and preparation of the coffee, but also provides a certain amount of river transportation.

The process of drying the coffee beans is the stage in which the greatest skill and care and good judgment are necessary, for upon what happens then, far more than upon the coffee as picked, depends the quality, the color and the market value of the beans. Absolute dependence upon weather conditions, as happens in the open-air drying method, is often a long and always a more or less uncertain process. Therefore, just as we see, around our large cities, more and more cultivation of garden truck under glass, where artificial heating and watering and protection against hail and heavy rains and frost are easily provided, so the artificial drying of coffee seems likely to solve some of the difficulties of sun-drying. Artificial drying is the result of man's ingenuity in making himself more and more independent of the uncertainties of the weather. There are several appliances for steam-drying coffee on the market, and it is likely that in time these will come into more general use to supplement perhaps, rather than to replace, the open-air drying. At present, however, there is a strong feeling on the part of most of the fazendeiros in the Sao Paulo coffee district that sun-drying gives better results; that the coffee dries more uniformly and has a better color.

Foreigners say that nothing but magnitude really appeals to the Americans; that our ambition is to make the biggest thing or the greatest quantity. Perhaps certain maps made by Mr. C. P. Gray of New York will corroborate this view. Mr. Gray made a map of the world eighteen feet wide and seventy-two feet long for the American Express Company. He has also made huge maps for the Harriman Railroad System and for the Gould System. The latter is thirty-five feet across, and, when unrolled, is forty-five feet high. It is on a spring roller. The scale is eight miles to the inch. All of the work was done by hand. Eight men worked almost continuously on it for a year.

INTERESTING ISLANDS OF THE SEA—ICELAND

ICELAND is a plateau or tableland built up of volcanic rock. About 517 square miles are covered with snow fields and glaciers and there are a number of lakes, the largest being about twenty-seven square miles in area. Over one hundred glaciers are known; the largest, Vatna jökull, having an area of from one hundred fifty to two hundred square miles. About one hundred volcanoes exist in the island. Hot springs are numerous and outside the town of Reykjavik, the capital, the women do their washing by the aid of this hot water.

Only one-fourth of the area of Iceland is inhabited or inhabitable, —the lowlands. The cultivated land in the whole island amounts to only about sixty square miles, equivalent to less than two townships, but outside of the cultivated ground there are often fields of green turf. Cattle, sheep, goats, and ponies are extensively raised—of sheep nearly 800,000. The crops are hay, potatoes and turnips. Rhubarb and black and red currants are the only fruits grown. The birch and the mountain-ash are the only trees to be found in the country. These, however, are very scarce, and a small wood near the east coast of the island is looked upon as a curiosity.

There are four agricultural schools in the country and the government is helping liberally in an effort to encourage market gardening and experiments in the planting of corn. The "Icelandic Agricultural Society" sends out agents through the country who give advice on the management of dairies, the rational rearing of cattle, better tools and new methods of production. About thirty-five dairies are exporting butter to England.

There are no roads in Iceland, except around Reykjavik, only pony tracks. The interior is a wild, desolate country with not a blade of grass, not a flower, simply lava and rocks on every side.

The people of the coast towns live upon the fish trade. Quantities of cod are dried in the sun, after being cleaned and salted. From a distance these fields of cod look like patches of snow. The fish are packed and sent in large consignments to America, Spain and Italy.

The chief town and capital is Reykjavik, with a population of 11,300. The museum, parliament house, hospital, church and the university are the principal buildings. The museum contains ornithological and mineralogical collections, and a fine library of over 40,000 books in all languages and excellent public reading rooms.

The Danish papers furnish the news of the outside world and the educated Icelander is as well up in all that is going on as men in New York and Paris. Good telegraphic and telephonic service is maintained throughout the inhabited parts of the country.

Nature, ancestry and education have made the Icelander a natural gentleman and a lover of books and learning, and no difference exists mentally between him and ourselves. W. E. H.

A GEOGRAPHY TEACHER'S EXAMINATION. CAN YOU PASS IT?

1. When teaching the geography of a country or grand division, do you make a practice of having a wall map before the class?
2. Do you regularly make use of the diagrams and illustrations in your text book? They are often more effective than a printed description.
3. Do you occasionally take a period or part of a period to teach your pupils how to study a lesson from the book? Such a practice will yield a good return.
4. Do you frequently call the attention of your pupils to the fact that the maps which they study are constructed on widely different scales and that a large country, like Venezuela, for example, may appear small on a map?
5. Do you go over a lesson in advance and definitely decide what points in it deserve emphasis and then do you seek to make those points stand out prominently?
6. Do you appreciate that one of the most valuable results of geography study comes from the mental map-pictures which the pupils store up and which, if clearly impressed on the memory, are used all through life?
7. Do you encourage—yes, actually require—pupils to use at least occasionally, the large atlas, the encyclopedia and other reference books? Knowledge of sources where facts are to be found is one of the best parts of an education.
8. Do you have pupils keep in touch with the current news pertaining to the countries which they are studying or have been studying?
9. Do you, in the upper grammar grades, insure that your pupils learn to see that men's larger activities in various parts of the world are determined by the geographical conditions under which they live? This principle is the key note of modern geography.
10. Do you persistently curb your tendency to teach too many facts—facts which your sane judgment tells you are ever-changing or unimportant? Effective teaching requires a sifting out of

the really fundamental facts about a country and laying the emphasis upon them.

11. Do you see to it that the location of the few great cities, the few large rivers, and the bodies of water that are commercially important are drilled so that the knowledge will stick? The list is not a long one.
12. Do you, with the advancing age of the pupils lay increasing emphasis on the Why?
13. Do you make map-drawing a part of the work? It is one of the effective ways of impressing outlines of countries, location of places, etc. Pupils usually like it, but it can be overdone.
14. Do you make a practice of reviewing the important facts and principles previously taught by yourself or by another teacher? Much of the ignorance of geography found among high school and college students is due to lack of review.
15. Do you aim to have pupils recite connectedly on a topic rather than give brief answers to questions which you ask?
16. In your class, is there any danger that the teacher does a disproportionate amount of the reciting?
17. When you finished reading these questions, did you say, "That sounds just like these writers in school papers and the speakers at teachers' institutes?" R. H. W.

GENERAL TRUTHS IN GEOGRAPHY AS ILLUSTRATED BY NEW ENGLAND RELIEF AND LIFE

By PHILIP EMERSON,
Principal Cobbet School, Lynn, Mass.

OLDTIME schoolwork in geography dealt with numberless details of location. The physical geography of high school courses has presented the general truths of the development of land forms. **All elementary geography should lead through the study of important fields of life relations to an appreciation of the larger laws of geography and the clearer and most significant general truths that characterize different nations, industries, land forms and climates.**

The study of important types of life and lands, combined with the comparison of varying examples of each type, will lead to the conception, if not the formulation, of some general truths of geography. And such inductive study should, of course, be followed by the use of these rules of life relations in the study of new fields and forms of life activity. In addition, the larger central truths of geography should be a guide to the teacher and an inspiration to stu-

dents in the first presentation or investigation of a new field or topic and in the review of a region or group of topics.

In undertaking the study of a continent or country, some great life fact of industry or history, which will be somewhat familiar as general information to most pupils, should give the starting point. The truth itself will be made clear and impressive. It will lead to the question, "Why so?" Thereby incentive is provided for the study of relief, climate and resources.*

In reviewing the study of a section some master truth should be considered in relation to other phases of geography, thereby securing a better understanding of causes and effects and a more thorough comprehension of each main topic, as well as a purposeful and interesting review. For example: the largest truth in the relief of New England is the fact that it is an upland, a peneplain, above which mountain peaks rise resistant and into which valleys have been cut. Most New England schools can teach this as local geography, by a field lesson. This truth affects all other topics and finely serves as a center for a review.

The climate varies with the relief. The annual isothermal lines bend southward over the uplands, northward along the Connecticut Valley lowland. The snow lies in upland sugar orchards while the valley roads are deep with spring mud. The great snowbank on Mount Washington does not disappear until midsummer. Thus the climate favors lumbering operations amid the forests of the rough, mountainous uplands by making even snow roadways. And it favors the summer vacation industry of the uplands, since the summer weather is cooler there than in the lowland cities.

Soils vary with relief. The soil on mountain slopes is scanty; glacial action bared their hard ledges, and when fires follow lumbering no soil is left wherewith to restore the forests. The government re-

*This method of approach is illustrated in the opening paragraphs of the revised edition of the New England supplement to the New Geographies of Tarr and McMurry:

NEW ENGLAND

The six New England states include only about a fiftieth of the area of the United States, and the surface is so rugged and boulder-strewn that most of the northern half is forested, and fully half of the southern portion consists of woodlands. Nevertheless a fifteenth of the people of the United States live in New England, a fifth of the cities of the United States are here, and the million and a half people in Greater Boston make this the fourth center of population in North America and the tenth in the world.

The workmen of New England make more than half the cotton, woolen, and worsted goods produced in all the states, more than half the leather and rubber shoes, and more than half of many of the costlier sorts of metallic goods, such as silverware, brassware, and hardware. Yet the coal, the cotton and wool, the leather and rubber, the steel, copper, and silver used in New England factories come from other sections and lands, as do also the grain and meat to feed its people.

ports on soils show the characteristic upland soils to be varieties of till or boulder clay; while those of the valleys are the reassorted sands and clays deposited by glacial streams. The boulders of the uplands were left bare by post-glacial erosion to hinder farming; those of the valleys were buried by sands. The upland soils are more enduring and more evenly fertile; those of the lowlands vary in fertility, but favor tillage because loose and level.

The relief, modified by glaciation, determines the drainage. The shallow upland valleys have been dammed by glacial moraines, affording natural storage reservoirs for waterpower. The irregular valley floors of main streams were buried beneath glacial gravels; so when the rivers cut their floodplains into terraces they unearthed frequent ledges, forming falls and affording frequent waterpowers on the main rivers down to tidewater.

The coastline is a product of the relief. The most eastern Monadnocks rise as rocky islands from the submerged border of the upland. The sunken upland ledges, covered with seaweeds that shelter and sustain a variety of lower forms of animal life, are the offshore feeding grounds of valuable food fish; as is also true of the **banks** further out to sea, which are covered with boulders and glacial gravels dropped there by ice bergs. The bays, of course, mark the seaward ends of the few lowlands and the many narrow river valleys. They therefore afford reasonably deep and safe anchorage, easily open to entrance save where the drifting glacial sands close them by sand bars.

The distribution of vegetation is well stated in terms of relief. The mountain sides remained forested longest—indeed these forests are to be saved and many stripped slopes are to be reforested by the nation and the states. The upland peneplain is either clothed in pasture grasses, which gives us milk and butter, or in patches of woodland that afford materials for boxes, firewood and novelties. The valleys grow intensive crops: vegetables, tobacco, potatoes, fruits.

Life depends upon relief. Even literature records the relation. Frank Bolles, in The Land of the Lingering Snow, describes "The world seen from the windswept heights of the Belmont-Arlington Ridge," the rim of the Boston Basin. He notes the valley "flats below—a nest of cities—the chilled breath of half a million people over them—the mystery of life." The "Westward view was monotonous," (the monotony of the peneplain level) "low ridges succeeding each other for miles—farming lands, bits of forest." "Northward, the horizon was roughened by the mountains of the Monadnock group which recalled boyhood days and adventures—a July picnic on Joe English Hill."

The early colonists chose the valleys for settlement: the Boston

Basin; Newport and Providence in the Narragansett Basin; New Haven, Hartford, Springfield in the Connecticut Valley lowland. They slowly cleared the uplands of Indians and forests. The mountains remained untenanted. Times changed; many went West, many sought homes beside valley waterpowers. Deserted farms and schools were a striking feature of the uplands; summer homes are a characteristic today. The valleys are becoming more and more densely settled by the children of the uplands and those of immigrant peoples. The mountains remain for forests and summer adventures.

Transportation is a matter of relief. The railways follow the valley grades. They go around the mountains, unless compelled to pass through them as at Hoosac Tunnel. If they rise to the upland level it is to reach some shire town and summer resort, or, more often, to cross from one valley to another.

So one central truth of geography is related to all others, and its use in review calls for more than mere recollection and restatement, it demands fresh thought and leads to class discussion. Renewed interest and new views of the relations between facts will make the retention of the larger truths more sure than much more time devoted to repetition.

EDITORIAL NOTES

THE trend toward **humanized** forms of Geography as contrasted with pure **physical** geography continues. The last report of the United States Commissioner of Education shows that the proportion of high school pupils who are studying physical geography is declining gradually. This, however, is true in the case of all of the physical sciences. No statistics are given for commercial geography. The book men report evidences of growing interest in this phase of the subject. Two new text books in commercial geography (Robinson's and Brigham's) have appeared during the past year. Gossip says that no less than three books constructed on new lines are in preparation. None of these are physical geographies of the usual type: all are reported to be efforts to apply the leading principles and truths of physical geography to the interpretation of human activities. While the recommendations of national committees have favored the introduction of regional geography into the high school, yet the only kind of regional geography which appears to be making headway is the study of commercial and industrial regions. So far as the new text books show, the tendency is to study the commercial and industrial geography of the **nations** of the earth. In other words, to adopt the time honored custom of the elementary school texts, but laying the emphasis upon production and trade.

At the same time that physical geography is apparently losing ground in the high schools it is rapidly gaining in the colleges. There are good reasons for this. When well taught, physical geography demands of pupils a considerable amount of thinking, reasoning and judging. To teach the subject effectively requires field work and laboratory work. Unquestionably pupils of the high school age can and ought to think, reason and judge. Field and laboratory work can be done and is done in some high schools. Yet the fact remains that a study which calls for scientific reasoning will succeed **better** with college students than with secondary school students. And it is equally true that the college teacher can much more conveniently take his classes on field excursions than can the high school teacher. Furthermore, laboratory work can be done more effectively under the conditions which obtain in colleges than under those which obtain in secondary schools.

For these and other reasons it is likely that physical geography will continue to gain ground as a college study and to lose ground as a high school study. Astronomy and geology are now little taught in high schools. Years ago they were commonly found in the curricula of the academies and high schools. There is no reason to suppose that physical geography will have this experience: it is far too valuable and practical to be dropped from the curriculum. It is more likely that it will take its place among the elective studies and take its chances with the other sciences.

But what about the merits of commercial geography, which, at present, is surely gaining in favor? Is it superior to physical geography? If so, in what particular or particulars? When the arguments pro and con are weighed, it will be found that each study has one strong argument in its favor. Physical geography more readily lends itself to scientific treatment. It calls for a larger amount of reasoning and judgment. It is a better disciplinary tool.

The weakness of commercial geography is that it so easily becomes simply a memory study, calling for little independent thinking and not developing intellectual power. It tends to store the mind with facts, but does not call upon the mind to do much more than remember the facts. Exception may be taken to this statement, but it must be conceded that the very nature of the study gives it this tendency.

On the other hand commercial geography is interesting; it is informing; it is more or less useful in the daily affairs of life, especially of business life. Because it is more interesting to the average pupil and because he thinks it is more practical than physical geography,

he is likely to study it more willingly. Since its facts and principles are pretty easily understood, pupils are not called upon to make severe mental effort to master them, and many pupils are averse to serious mental effort.

A college text book (Gregory, Keller and Bishop's) has been prepared with the aim of uniting physical and commercial geography. A considerable number of high schools are giving a year to geography, one half to physical and one half to commercial. This is a tendency which seems to deserve support.

NOTES ON THE COMMERCE OF THE UNITED STATES

(From Bulletins of the Dept. of Commerce and Labor)

EXPORTS of Iron and Steel.—An increase of over 51 million dollars in the exports of iron and steel manufactures and a decrease of over 4 million dollars in the imports of this class of merchandise are striking characteristics of the foreign commerce of the United States in the fiscal year just ended. Iron and steel manufactures exported aggregated $231,000,000 in value, against $179,000,000 in 1910 and $184,000,000 in the former high record year, 1908.

The exports of iron and steel manufactures in the fiscal year 1911 were $51,000,000 in excess of those of the preceding year and $46,000,000 in excess of the highest record ever made prior to 1911. Ten years ago, in 1901, the exports of iron and steel manufactures abounted to but 117 million dollars; twenty years ago, 29 million; and 30 years ago, 16½ million, speaking in round terms. The chief growth has occurred in the last dozen years, the total having never touched the $100,000,000 line prior to 1900, in which year it was 122 million dollars. By1905 it had risen to 135 million; by 1908, to 184 million; and in 1911, as already indicated, the total was 231 million.

Exports of manufactures and farm products.—The farmer and the manufacturer shared about equally in the remarkable growth in exports which characterized the fiscal year just ended. The total increase in exports was 304 million dollars when compared with the immediately preceding year, being a larger gain than ever before shown in a single year of our export trade. Of this gain of 304 million dollars, manufactures as a whole supplied 140 million dollars; cotton about 135 millions.

Cotton is King in the exports of products of agriculture, the value exported during the year being 585 million dollars, by far the largest total ever shown in the cotton export trade. Meat and dairy products show a total of approximately 150 million dollars,

against 131 millions last year, but materially less than in certain earlier years in which the total ranged as high as 211 millions (in 1906.)

The United States as a distributor of foreign merchandise.—The quantity of foreign merchandise brought into the United States and redistributed to other parts of the world increases year by year. The value of foreign merchandise exported from the United States amounted to 12 million dollars in 1890, and 36 million in 1911.

It seems curious to think of the United States sending foreign merchandise to England, the greatest importing country in the world, and yet more than 9 million dollars worth of foreign merchandise was sent from the United States to England in the fiscal year 1910.

Exports of domestic manufactures nearing the billion dollar line.—Exports of manufactures may pass the billion dollar line in the fiscal year upon which the country is now entering.

A comparison of the export record of the year just ended with that of a decade or two decades ago is interesting. The total value of manufactures exported in 1911 was 910 million dollars, against 466 million in 1901, 10 years ago, and 188 million in 1891, 20 years ago. Thus the value of manufactures exported has increased nearly 100 per cent. in the 10-year period and 384 per cent. in the 20-year period.

The following list shows the leading ten manufactures exported in 1911 in the order of value:

Illuminating oil	Boots and shoes of leather
Cotton cloths	Automobiles
Lubricating oil	Rails for railways
Builders' hardware, and tools	Turpentine, spirits of
Mowers and reapers	Pipes and fittings

Decreased importations.—The quantity of merchandise brought into the United States in the fiscal year 1911 is materially less than in 1910. The value of the year's imports shows a fall of 29 million dollars, or about 2 per cent. below those of the high record year 1910, but in most cases the decline in quantity is greater than this slight fall in the value would indicate.

The following table shows the principal articles imported in 1911 in the order of value.

Sugar	Cotton laces
Coffee	Diamonds
India rubber, crude	Copper in pigs
Silk, raw	Fibers, unmanufactured
Hides and skins	Tobacco, leaf
Tin in bars	Cotton, raw

TYPES OF REVIEW QUESTIONS.

(1) What and where is each of the following? Volga, Alhambra, Gibraltar, Rhone, Corsica, Baltic, Vatican, St. Gothard, Matterhorn, Dover, Aegean, Lucerne, Bosporus, Clyde, Colosseum, Po, Black, Lands End, Simplon, St. Peters, Kremlin, Waterloo, Muir, Hammerfest, Reichstag, Andorra, Oxford, Crete, Blanc, Shetland, Crimea.

(2) Arrange the following cities in a column, placing the most northerly at the top, and so on down to the most southerly: New York, Berlin, Paris, St. Petersburg, Rome, New Orleans, Halifax, Calcutta, Cairo (Egypt), Singapore, Glasgow, Peking.

(3) If you were to travel straight west around the world from New York, through what countries and near what great cities would you pass?

(4) Compare the longitude of Cape Horn and Key West; the latitude of Cape Horn and the Cape of Good Hope; the latitude of the mouth of the Mississippi and of the Nile; the longitude of Alaska and Hawaii.

(5) If the southern end of Chile were placed at the southern end of Florida, and Chile allowed to extend northward across North America, how far would it reach?

If Cuba were placed with its eastern end at New York, and allowed to extend westward across the U. S., how far would it extend? If the northernmost island of Japan were placed in Maine, and the other islands extended south-westward, how far would they reach?

(6) If you were a great merchant and bought and sold everything, where in Europe would you probably buy—silk goods, cork, cut diamonds, woolen goods, toys, wines, cotton goods, laces, sulphur, olives, beet sugar, wheat, butter and cheese, china dishes, carpets?

(7) If you were rich and had leisure to travel as you wished, where would you go to see—glaciers, the mid-night sun, the finest art galleries, beautiful mountain scenery, old castles, great cathedrals, active volcanoes, beautiful lakes, fiords, Moorish ruins, great cotton mills, mulberry groves and silk culture, vineyards, coal mines, the greatest European Fair, oil (petroleum) fields, ship yards?

(8) What would you expect would be a large part of the cargo, each way, of ships sailing between the following ports? New York and Rio Janeiro? Guayaquil and Philadelphia? Havana and Boston? Charleston and Liverpool? New York and Para? Buenos Aires and London? Yokohama and San Francisco? Honolulu and San Francisco? Boston and Calcutta? Odessa and London? Hamburg and New York?

(9) Why is Central Russia colder and drier than Germany?

Why does Belgium surpass Holland in manufacturing?

Why does Germany have a great army and Great Britain a great navy?

Why are there many lakes in Northern Europe and few in Southern Europe?

Why is Germany outstripping France in manufacturing?

Why is Europe the only grand division without deserts?

Why does the St. Lawrence carry little sediment and the Mississippi much?

Why has the Nile no tributaries in its lower course?

Why is the desert west of the Andes in Peru and east in Argentina?

Why have the Norwegians always been a sea-faring people?

(10) On an outline map of the world, shade in black the regions that are too cold to support a large population; too hot and wet; too dry. Estimate the proportion of the continents shaded. On the same map, shade in brown the great wheat growing regions, in blue, the leading cotten belts. In other colors or by other means, show on the map the location of the great rubber forests, the tea producing regions, the coffee producing countries, the silk producing regions, the great grazing lands, the five leading gold producing regions, the world's great diamond mines, the four chief wool growing regions, the cocoa producing countries. (It is better if several different outline maps are used.)

FOR PHYSICAL GEOGRAPHY

(11) Distinguish between latitude and longitude; erosion and weathering; asteroid and satellite; drumlin and moraine; delta and estuary; joint plane and bedding plane; barometer and thermometer; cyclone and tornado; spring tide and neap tide; tropical calm belt and equatorial calm belt; valley glacier and piedmont glacier; cloud and fog; coastal plain and continental shelf; ellipse and orbit; erratics and boulders; flood plain and wash plain; metamorphic rock and igneous rock; harbor and port; ice floe and ice pack; isthmus and peninsula; lava intrusion and lava flow; meridian and parallel: planet and star; residual soil and alluvial soil; till and soil; geographical equator and heat equator; pass and water gap; atmosphere and space; weather and climate; river basin and river system; trade wind and monsoon.

(12) What cause or causes produce waterfalls, winds, change of seasons, valley glaciers, tides, ocean currents, volcanoes, earthquakes, geysers, migration of the wind belts, monsoons, horse latitudes, trade winds, clouds, rain, dew, frost, snow, mountain ranges, mountain peaks, mountain passes, land and sea breezes, caves, sargasso seas.

COMMON MISTAKES IN GEOGRAPHY*

SINCE ideas gained in childhood are firmly fixed in the mind, it is essential that they be correct ones. Colloquial expressions learned in the earlier days of life, become a great source of annoyance at a later period. There are certain persistent errors in geography which are in such common usage that they are frequently passed unrecognized. It is the purpose of this article to call attention to such mistakes in order that the present day pupils may not be handicapped in later years by having acquired erroneous opinions and phrases from the elementary studies.

What is the form of the earth? The form of the earth is an oblate spheroid, but for all practical purposes it may be considered a sphere. The fact that approaching ships first show their sails does not prove the earth to be a sphere. A curved surface would give the same effect and consequently, so far as reason is concerned, the earth might be considered as shaped like a pie. The fact that men have traveled around the earth does not prove it to be a sphere. Men could travel around the earth if it were a cube.

What is the "crust" of the earth? It was formerly thought that the interior of the earth was a molten mass and that the exterior was a crust. The condition is impossible since the tremendous pressure of the soil and rocks would not allow substances to exist in any state except that of a solid. If the earth were not a solid it would behave differently toward other planets, and there would be internal tides. Another evidence that the earth is a solid is shown by earthquake waves. The shocks from an earthquake travel at a velocity that would be expected in a solid and not in a liquid. There is no such thing as the "crust" of the earth.

What is the sky? The blue sky seems to rest upon the earth, and as children we have often thought of walking to it. The sky is no more a real object than a rainbow, but is the appearance produced by the reflection of blue light from the air.

Distinguish between the following: British Isles, Great Britain, the United Kingdom, and the British Empire. Many people use these terms synonymously. Great Britain includes England and Scotland; the United Kingdom includes all the British Isles; the British Empire includes the United Kingdom and all its possessions.

If a place is directly below on the map, is it directly south? It is a common error to think that what is directly below on the map is

*Selected from a list written by William Gould Vinal, Salem Normal School, and published in the Educational Bi-Monthly (Chicago) June, 1911.

directly south. Only places on the same meridian are north or south of each other. For the same reason a straight line on a map does not represent the shortest distance between two places.

What direction does the top of the map indicate? Some students think that the top of the map must always be north and the right hand east. These conditions usually exist but a map of the United States, although Texas were at the top, would still be a map of the United States.

Do Arctic explorers go "up north?" The expressions "up north" and "down south" are incorrect. Down is toward the center of the earth and up is in the opposite direction. This notion probably arose from the fact that the top of the map is generally the northern part.

Point in the direction of the north pole. Ask a pupil to point at the north pole and he either points to the northern horizon or to the North Star. If a cannon ball were shot in such a direction it would travel out into space. One would have to point down into the earth at an angle, depending upon the number of degrees the observer is from the pole.

How correct is the scale of miles? The globe is the most correct means of representing the distribution of land and water, but it is not large enough to exhibit the features of small areas. It is impossible to represent correctly the curved surface of the earth upon a plane surface. The central part of our hemisphere maps is in true proportions, but at the edges the distance between two places is doubled. On a common Mercator map, measurements at the equator are correct but the distances on the sixtieth parallel are doubled. Christiana for illustration is represented twice as far from Cape Farewell as it actually is.

What is a river divide? A river divide is not necessarily a mountain. It might be a plain.

What is the cause of irregular coast lines? It is generally due to the sinking of the coast. In Norway however the fiords are due to glacial erosion.

What is the fertility of desert soil? It is commonly thought that desert soil is always poor soil. It would not pay to irrigate soil which is unproductive. Desert soil is usually rich soil. It needs moisture and not fertility.

What enables rivers to traverse deserts? The Nile and the Colorado Rivers are examples of rivers which maintain their course across a desert. These rivers do not get the bulk of their water supply from the desert. Their water supply is regulated and kept constant by the melting of snow in the mountains.

What is the climate of deserts? The desert is not limited to warm

regions but may be a cold expanse in Northern Siberia. Deserts are not limited to absolutely dry regions, but have some rainfall.

Which is heavier, moist air or nearly dry air? Since vapor goes up it is lighter in weight than air. The vapor in the air displaces some of the nitrogen and oxygen and therefore makes the moist air lighter.

Explain the motions of heated air. We should avoid the expression "warm air rises." Heat causes air to expand in all directions. The heavier cold air pushes up the lighter warm air the same as mercury pushes up water when mercury is poured into a test tube holding water. Warm air does not rise, it is pushed up.

What is the origin of dew? Dew does not fall but collects upon objects cooler than the air.

Why is a rainy day a "good day?" It is customary to call a sunshiny day a "good day" and a rainy day a "bad day." The rainy day is just as good a day as the sunshiny day, and is just as essential to our well being.

Do forests cause rainfall? The popular opinion is that forests cause rainfall, but in reality the rain is the cause of the forest. The want of rain prevents the growth of trees.

Why do forests grow on the hills and not in the valleys? Trees do not grow on the hills because they do not like the valleys, but because the valleys have been cleared away for agriculture and other industries.

Why can we look at the sun late in the afternoon and not at midday? This is not because the sun is farther away nor because it is less bright. The rays have to pass through more dust at sunset than at noon and it is consequently like looking through smoked glass.

Where does the sun rise? It is a common saying that the sun "rises in the east and sets in the west." Sunrise and sunset are convenient terms for the apparent motion of the sun. The real motion is the rotation of the earth into the sunlight. The sun practically "stands still" as Joshua commanded it to do. The sun rises directly in the east and sets directly in the west but twice a year.

Where does the day commence? Some have thought that the day commences at Greenwich, possibly because longitude is reckoned from that place. It has been decided by arbitration that the International Date Line, which is near the 180th meridian, should mark the beginning of day.

Where is the sun at noon? The sun is not directly overhead at noon except for persons on one parallel. That parallel must be in the Torrid Zone, and the sun is over one parallel but twice in one year.

How long is a day? It is usually thought that a day is twenty-four hours long. It is, for any one locality, but the total length of each day is forty-eight hours. The new day commences at midnight. It takes midnight twenty-four hours to pass around the earth, so that when the new day commences just east of the International Date Line, that day has already existed twenty-four hours; yet it will be twenty-four more hours before the day will end at that place. Christmas, therefore, is celebrated for forty-eight hours on the surface of the earth.

When is the sun nearer to us, in the summer or in the winter? The sun is nearer to us in the winter but the rays are more direct in the summer. It is the direct rays that produce the warm season.

Which name is more appropriate, Winter Solstice or December Solstice? What is called the Winter Solstice by us is really the Summer Solstice for the southern hemisphere. It would be better to call it the December Solstice.

Where is the line of greatest heat? When speaking of the equator the geographical equator is usually meant. The geographical equator is a fixed regular line but never represents the line of greatest heat. The heat equator is an irregular line which moves from about 23.5 degrees north to the region of 23.5 degrees south of the geographical equator.

The Superintendent of Documents, Washington, D. C., has recently issued a revised list (No. 35) of government publications in the field of GEOGRAPHY AND EXPLORATIONS. It contains a list of the hundreds of geographical publications issued by our government and for sale at cost by the Superintendent of Documents. Doubtless many of them can be secured through your senator or representative in congress free.

RECENT PUBLICATIONS

INFLUENCES OF GEOGRAPHIC ENVIRONMENT, ON THE BASIS OF RATZEL'S SYSTEM OF ANTHROPO-GEOGRAPHY. By Ellen Churchill Semple, XVI + 683pp., 21 maps. Henry Holt and Co., New York, 1911. $4.00.

This volume is unquestionably the most scholarly contribution to the literature of geography that has yet been produced in America. Miss Semple was a pupil of Ratzel's and from that master she has drawn inspiration. Of him and his work she says: "He took a mountain top view of things, kept his eyes always on the horizon and in the splendid sweep of his scientific conceptions overlooked the details near at hand." Miss Semple concedes that Ratzel's principles of anthropo-geography did not constitute a complete, well-proportioned system and that his works possess an inadequate citation of authorities. In the latter particular, at least, her own book is not open to criticism, for she makes nearly one thousand five hundred separate citations of authorities. The chapter on "Island Peoples" is fortified by two hundred twenty-three references. The amount of research involved in the production of the book is simply prodigeous and for her heroic work the author will receive the unstinted appreciation of geographers and students of geography throughout the English-speaking world.

The writer of this review is not qualified to say whether or not the deliberate judgment of the years is likely to place *Influences of Geographic Environment* among the really great books on anthropo-geography, but, that a volume of such evident and unquestionable merit has been produced by an American geographer, is a matter of just pride to us.

Doubtless the historians will find some things in the book that they do not accept. Every thoughtful reader will find here and there that the author has drawn conclusions and made interpretations in accordance with preconceived ideas. Being a geographer, and believing in the profound influence of geographic environment, it is not strange if she gives greater weight to the geographical element in history than the ordinary historian would give. But judging from the way in which the historians tear to pieces many of the conclusions drawn by other historians, it will not be strange if they find points to criticise in Miss Semple's book. The author's tendency toward the use of the figure personification seems somewhat unfortunate in a scientific treatise. A figure of speech is not, of course, to be taken literally, but it is capable of being taken with many varying degrees of literalness by different readers, and hence leaving different impressions with different readers. Enthusiasts in any line are prone to over-statement. The reader learns that he must discount many of the enthusiast's assertions, and he does so. The statements in a truly scientific work ought not to require discounting but if the language is too figurative the reader forms, perhaps unconsciously, the habit of discounting what he reads. Miss Semple's last book is, as a rule, to be commended for general moderation in statement, notwithstanding the free use of figures of speech.

The quality in the book which impresses you again and again is the broad scope of the author's reading, yielding a multiplicity of illustrations from every part of the world. Very little seems to have escaped her search, and the faithfulness with which she cites authority after authority is most gratifying.

The volume contains seventeen chapters. Some of the chapters are:

Operation of Geographic Factors in History, Geographical Boundaries, Coast Peoples, Man's Relation to the Water, Island Peoples, Plains, Steppes and Deserts, Mountain Environment, and the Influence of Climate upon Man. The chapter on the Influence of Mountain Environment is one of the best.

In places, Miss Semple has attained a Macaulay's excellence in the construction of paragraphs, making the first sentence of a paragraph a general truth which is illustrated by the details which follow. Topic sentences chosen from the chapter on Mountains will illustrate:

"A mountain environment encourages political disunion is several forms." (p. 592).

"The power of mountains to protect makes them asylums of refuge for displaced peoples." (p. 595).

"Like remote islands they are often museums of social antiquities." (p. 599).

"The mountain-dweller is essentially conservative." (p. 600).

"Everywhere in mountain regions appears the repugnance to centralized authority." (p. 595).

"Marauding propensities are marked among all retarded mountain peoples of modern times." (p. 587).

An analytical Table of Contents, marginal sub-heads, and a splendid index contribute greatly to the usefulness of the book as a reference work. The quality of the index may be judged from such facts as these: there are over one hundred page-references to "Nomads"; twenty-five to "Fur Trade"; fifty to "England"; one hundred to "Boundaries." In all there are forty-five double-column pages in the index.

Whatever future geographers may judge regarding Miss Semple's effort to give the English-speaking peoples a scholarly and authoritative treatise on the Influences of Geographical Environment, present geographers cannot but feel a deep sense of gratitude to her. Much that she has set down will stand. In her own words, "some of its principles may have to be modified or their emphasis altered after wider research." But she has "made the way easier for the scholar who shall some day write the ideal treatise on Anthropo-geography." This book marks a long step forward.

COMMERCIAL GEOGRAPHY. By Albert Perry Brigham. XV + 469. pp., 17 colored maps and 253 other illustrations. Ginn & Co., Boston, 1911. $1.30.

The book is divided into Parts I, II, and III. Part I, Introduction to Commercial Geography. This consists of six excellent chapters on Wheat, Cotton, Cattle Industries, Iron, Coal, and the Principles of Commercial Geography. The treatment of each of these five great industries is detailed, and because the author has had the courage to devote ninety pages to these great industries, he has thereby laid an excellent foundation for the intelligent study of all that follows.

Part II, The United States, consists of 176 pp., or more than one-third of the book; this is as it should be. Professor Brigham does not lay so much stress on physical geography as one would expect, knowing him to be a physiographer and geologist. Whether or not this omission is a fault is purely a matter of opinion. School men generally will not complain of the omission.

Part III, Commercial Geography of Other Countries. Canada, The United Kingdom, France, and Germany get rather full treatment, and other countries have only their chief commercial activities touched upon. Here again Professor Brigham's balance and saneness stand out. He has placed emphasis where emphasis is due.

His little maps with the solid black circles to show quantitative facts are striking and are bound to win favor.

All around, this book is capital.

OUR COUNTRY AND ITS PEOPLE. By Will S. Monroe and Anna Buckbee. XII + 130 pp., illustrated, 12 mo. cloth. Harper Bros., New York, 1911. 40 cents.

The authors call it an Introductory Geography for the Fourth School Year. A consistent effort is made to weave together the larger facts of Physical and Industrial Geography. The diction is very simple and clear, the sentences short, the facts well chosen, and, for the most part, the matter presented is as well adapted to ten-year-olds as that usually prescribed in our courses of study. Some inaccuracies have crept in, as, for example, that the United States is the greatest gold producer; that the old Appalachian Mountains are west of Harrisburg; that Omaha is the lowest point in the Great Central Plains.

HOW THE WORLD IS HOUSED. By Frank Carpenter. 352 pp., profusely illustrated. American Book Company, New York, 1911. Third in the series on industry and commerce, *How the World is Fed* and *How the World is Clothed* being the earlier volumes.

The book is full of the kind of information that interests children. What kind of houses children in other parts of the world live in, or in fact anything that tells of *homes*, enlists an elemental interest in little people. Mr. Carpenter has been peculiarly successful in writing for children and his last book will add materially to the excellent series.

Elementary school geography needs just this sort of supplementary material. It is not the whole of geography but it is a very vital part, especially if treated from a causal standpoint and hence is made rational rather than merely empirical.

THE CONTINENTS AND THEIR PEOPLE—NORTH AMERICA. By James F. Chamberlain and Arthur H. Chamberlain. XI + 299 pp., illustrated; 6 color maps; 30 chapters. The Macmillan Co., New York, 1911. 55 cents net.

This little volume evidently belongs to the supplementary reader class. The authors term is a supplementary geography. It is a well nigh impossible task to treat all of North America in small space and at the same time to amplify the larger topics sufficiently to make the treatment more valuable than that found in the geography text-book. Unless the supplementary reader, by rigidly limiting the number of topics treated, enlarges and enriches the topics that it does treat then it is scarcely more than a *text* book. Where the authors have enlarged upon certain interesting matters, as, for example, in describing oyster farming, they have done a genuine service to teachers.

CYZICUS. By F. W. Hasluck, Fellow of Kings College, Cambridge, VIII + 326 pp., illustrated. The Cambridge University Press. 1910. 10 shillings net.

This is an account, chiefly a compilation, of the History and Antiquities of the ancient city of Cyzicus in Asia Minor, and of the district adjacent to it.

SOME OF THE LEADING ARTICLES IN THE JOURNAL OF GEOGRAPHY LAST YEAR (VOL. IX)

This list is given in order that persons who are not acquainted with the Journal may gain an idea of its contents.

Man and His Environment in Germany.....R. S. Tarr
The Origin of Some Geographic Names.....Amos W. Farnham
Geographic Influences in the Development of Indiana.....
.....Charles R. Dryer
The World's Great Rivers—The Amazon, the Mississippi, the Yang-tse, the Volga, the Nile.
Physiography in the High School.....Rollin D. Salisbury
Geographical Influences in Alaska.....Lawrence Martin
Geographic Influences in the Development of Nebraska.....
.....G. E. Condra
Climate as Related to Industry and Commerce.....
.....James F. Chamberlain
Improvement in Geography Teaching.....W. J. Sutherland
A Comparison of Trans-Appalachian Railroads.....A. E. Parkins
Geographic Influences in the Development of New York State.....R. H. Whitbeck
Industrial Geography, its Meaning, Scope and Content.....
.....Carl F. Knirk
Commercial Geography in Philadelphia.....Wesley N. Clifford
A Symposium on Commercial Geography.
Geographic Influences in the Development of Ohio.....
.....Frank Carney
The Ohio Valley in Relation to Early Ohio History.....
.....George W. Hoke
The Teaching of Physical Geography in Ohio.....Geo. R. Twiss
Short Studies Abroad—The Seven Hills of Rome.....W. M. Davis
Primary Aims in Geography Teaching in the Grammar Grades
.....Jane Perry Cook
Geographic Influences in the Development of Illinois.....
.....Douglas C. Ridgley
Geography in Germany and in the United States.....
.....Martha K. Genthe
The Great Plains in their Relation to Human Occupation and Development.....Caroline W. Hotchkiss
Geographic Influences in the Development of California.....
.....James F. Chamberlain
Topographic Environment of San Francisco.....Ruliff S. Holway
The California Oil Industry.....Ralph Arnold
The Raisin Industry in California.....Edna E. Rowell
The Geographic Determinants of Los Angeles.....W. H. Snyder